

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A semiconductor device comprising:
a crystalline semiconductor film having a thickness ~~between~~ from 5 ~~[[and]]~~ to 40 nm, wherein:
a carbon concentration and a nitrogen concentration are 5×10^{18} atoms/cm³ or less, and an oxygen concentration is 1.5×10^{19} atoms/cm³ or less;
a main orientation plane is a {110} plane; and
an absolute value of a rotation angle made by equivalent axes between adjacent crystal grains or by axes in rotation relation of 70.5° with respect to the equivalent axes is within 4°.
2. (Original) A semiconductor device according to claim 1, wherein the crystalline semiconductor film is a single crystal or substantially a single crystal.
3. (Original) A semiconductor device according to claim 1, wherein the crystalline semiconductor film comprises Si_xGe_(1-x) (0<x<1).
4. (Original) A semiconductor device according to claim 1, wherein the semiconductor device is at least one of a liquid crystal display device and an EL display device.
5. (Original) A semiconductor device according to claim 1, wherein the semiconductor device is at least one selected from the group consisting of a personal

computer, a video camera, a goggle-type display, a digital camera, a player using a recording medium, a mobile computer, and a projector.

6. (Currently Amended) A semiconductor device comprising:

a crystalline semiconductor film having a thickness ~~between~~ from 5 ~~[[and]]~~ to 40 nm, wherein:

a carbon concentration and a nitrogen concentration are 1×10^{18} atoms/cm³ or less, and an oxygen concentration is 5×10^{18} atoms/cm³ or less;

a main orientation plane is a {110} plane; and

an absolute value of a rotation angle made by equivalent axes between adjacent crystal grains or by axes in rotation relation of 70.5° with respect to the equivalent axes is within 4°.

7. (Original) A semiconductor device according to claim 6, wherein the crystalline semiconductor film is a single crystal or substantially a single crystal.

8. (Original) A semiconductor device according to claim 6, wherein the crystalline semiconductor film comprises $\text{Si}_x\text{Ge}_{(1-x)}$ ($0 < x < 1$).

9. (Original) A semiconductor device according to claim 6, wherein the semiconductor device is at least one of a liquid crystal display device and an EL display device.

10. (Original) A semiconductor device according to claim 6, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a goggle-type display, a digital camera, a player using a recording medium, a mobile computer, and a projector.

11. (Currently Amended) A semiconductor device including a circuit which is constituted by a thin film transistor having a semiconductor film as a channel formation region, wherein:

a carbon concentration and a nitrogen concentration are 5×10^{18} atoms/cm³ or less, and an oxygen concentration is 1.5×10^{19} atoms/cm³ or less;

a main orientation plane is a {110} plane; and

an absolute value of a rotation angle made by equivalent axes between adjacent crystal grains or by axes in rotation relation of 70.5° with respect to the equivalent axes is within 4°.

12. (Original) A semiconductor device according to claim 11, wherein the crystalline semiconductor film is a single crystal or substantially a single crystal.

13. (Original) A semiconductor device according to claim 11, wherein the crystalline semiconductor film comprises $\text{Si}_x\text{Ge}_{(1-x)}$ ($0 < x < 1$).

14. (Original) A semiconductor device according to claim 11, wherein the semiconductor device is at least one of a liquid crystal display device and an EL display device.

15. (Original) A semiconductor device according to claim 11, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a goggle-type display, a digital camera, a player using a recording medium, a mobile computer, and a projector.

16. (Currently Amended) A semiconductor device including a circuit which is constituted by a thin film transistor having a semiconductor film as a channel formation region, wherein:

a carbon concentration and a nitrogen concentration are 1×10^{18} atoms/cm³ or less, and an oxygen concentration is 5×10^{18} atoms/cm³ or less;

a main orientation plane is a {110} plane; and

an absolute value of a rotation angle made by equivalent axes between adjacent crystal grains or by axes in rotation relation of 70.5° with respect to the equivalent axes is within 4°.

17. (Original) A semiconductor device according to claim 16, wherein the crystalline semiconductor film is a single crystal or substantially a single crystal.

18. (Original) A semiconductor device according to claim 16, wherein the crystalline semiconductor film comprises Si_xGe_(1-x) (0<x<1).

19. (Original) A semiconductor device according to claim 16, wherein the semiconductor device is at least one of a liquid crystal display device and an EL display device.

20. (Original) A semiconductor device according to claim 16, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a goggle-type display, a digital camera, a player using a recording medium, a mobile computer, and a projector.

21. (New) A semiconductor device comprising:

a crystalline semiconductor film having a thickness from 5 to 40 nm, wherein:

a carbon concentration and a nitrogen concentration are 5×10^{18} atoms/cm³ or less, and an oxygen concentration is 1.5×10^{19} atoms/cm³ or less; and

an absolute value of a rotation angle made by equivalent axes between adjacent crystal grains or by axes in rotation relation of 70.5° with respect to the equivalent axes is within 4° .

22. (New) A semiconductor device according to claim 21, wherein the crystalline semiconductor film is a single crystal or substantially a single crystal.

23. (New) A semiconductor device according to claim 21, wherein the crystalline semiconductor film comprises $\text{Si}_x\text{Ge}_{(1-x)}$ ($0 < x < 1$).

24. (New) A semiconductor device according to claim 21, wherein the semiconductor device is at least one of a liquid crystal display device and an EL display device.

25. (New) A semiconductor device according to claim 21, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a goggle-type display, a digital camera, a player using a recording medium, a mobile computer, and a projector.

26. (New) A semiconductor device comprising:
a crystalline semiconductor film having a thickness from 5 to 40 nm, wherein:
a carbon concentration and a nitrogen concentration are 1×10^{18} atoms/cm³ or less, and an oxygen concentration is 5×10^{18} atoms/cm³ or less; and
an absolute value of a rotation angle made by equivalent axes between adjacent crystal grains or by axes in rotation relation of 70.5° with respect to the equivalent axes is within 4° .

27. (New) A semiconductor device according to claim 26, wherein the crystalline semiconductor film is a single crystal or substantially a single crystal.

28. (New) A semiconductor device according to claim 26, wherein the crystalline semiconductor film comprises $\text{Si}_x\text{Ge}_{(1-x)}$ ($0 < x < 1$).

29. (New) A semiconductor device according to claim 26, wherein the semiconductor device is at least one of a liquid crystal display device and an EL display device.

30. (New) A semiconductor device according to claim 26, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a goggle-type display, a digital camera, a player using a recording medium, a mobile computer, and a projector.

31. (New) A semiconductor device including a circuit which is constituted by a thin film transistor having a semiconductor film as a channel formation region, wherein:
a carbon concentration and a nitrogen concentration are 5×10^{18} atoms/cm³ or less, and an oxygen concentration is 1.5×10^{19} atoms/cm³ or less; and
an absolute value of a rotation angle made by equivalent axes between adjacent crystal grains or by axes in rotation relation of 70.5° with respect to the equivalent axes is within 4°.

32. (New) A semiconductor device according to claim 31, wherein the crystalline semiconductor film is a single crystal or substantially a single crystal.

33. (New) A semiconductor device according to claim 31, wherein the crystalline semiconductor film comprises $\text{Si}_x\text{Ge}_{(1-x)}$ ($0 < x < 1$).

34. (New) A semiconductor device according to claim 31, wherein the semiconductor device is at least one of a liquid crystal display device and an EL display device.

35. (New) A semiconductor device according to claim 31, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a goggle-type display, a digital camera, a player using a recording medium, a mobile computer, and a projector.

36. (New) A semiconductor device including a circuit which is constituted by a thin film transistor having a semiconductor film as a channel formation region, wherein:

a carbon concentration and a nitrogen concentration are 1×10^{18} atoms/cm³ or less, and an oxygen concentration is 5×10^{18} atoms/cm³ or less; and

an absolute value of a rotation angle made by equivalent axes between adjacent crystal grains or by axes in rotation relation of 70.5° with respect to the equivalent axes is within 4°.

37. (New) A semiconductor device according to claim 36, wherein the crystalline semiconductor film is a single crystal or substantially a single crystal.

38. (New) A semiconductor device according to claim 36, wherein the crystalline semiconductor film comprises Si_xGe_(1-x) ($0 < x < 1$).

39. (New) A semiconductor device according to claim 36, wherein the semiconductor device is at least one of a liquid crystal display device and an EL display device.

40. (New) A semiconductor device according to claim 36, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a goggle-type display, a digital camera, a player using a recording medium, a mobile computer, and a projector.--